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10/622,781	07/21/2003	Young Woo Yun	K-0167A	4255

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EXAMINER	
ABRAHAM, ESAW T	

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 05/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/622,781	YUN ET AL.	
	Examiner	Art Unit	
	Esaw T. Abraham	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-82* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *33-39,49 and 68* is/are allowed.

6)☒ Claim(s) *21-32,40,42-48,50-67 and 69-82* is/are rejected.

7)☒ Claim(s) *41* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims **21-82** are presented for examination.

* The examiner considers the preliminary amendment filled on 09/24/04.

* Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Claim objections

2. Claims **48, 49, 56, 68 and 69**, are objected to because of the following informalities:

a) Claim 48 recites "a memory" instead of "the memory" as defined in the specification.

Please change the phrase "means interleaving" and "means calculating" ---to--- "means for interleaving" and "means for calculating" (see in claim 48 lines 3 and 5).

Please change the phrase "means interleaving" and "means providing"---to--- "means for interleaving" and "means for providing" (see in claim 49 lines 3 and 5).

Please change the phrase "A rate matching method for uplink comprising" ---to--- "A rate matching method for uplink of a mobile communication system, comprising:" (see claim 56, line 1).

Please change the phrase "A rate matching method for uplink comprising" ---to--- "A rate matching method for uplink of a mobile communication system, comprising:" (see claim 68, line 1).

Please change the phrase " a parameter controlling a position" ---to--- "a parameter controlling position" (see claim 69, line 5).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U. S. C 112

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims **21, 50, 51, 56, 60, 69 and 74** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claim 21 recites "the second parity bit sequence" which is inconsistent with what was previously recited (i.e. "a second bit sequence"). Therefore, the recitation lacks an antecedent basis (see claim 21, line 9).

b) Claim 50 recites "in any one of claims 1, 2, 4, and 8". Claims 1, 2, 4 and 8 do not exist in the application. Therefore, the applicant must cancel or amend claim 50.

c) Claim 51 recited, "a code symbol unit depending upon" Emphasis Added). The term "depending upon" is indefinite (see claim 51, line 3).

d) Claim 56 recited, "a code symbol unit depending upon" Emphasis Added). The term "depending upon" is indefinite (see claim 56, line 9).

e) Claim 56, recites, "inputting an output [emphasis added] (see claim 56, line 2)" which renders the claim indefinite since it is unclear what the rate matching method is inputting and outputting. The examiner would appreciate if the applicant would clarify this matter.

f) Claim 60 recited, "a code symbol unit depending upon" Emphasis Added). The term "depending upon" is indefinite (see claim 60, line 5).

g) Claim 60, recites, "A rate matching for an uplink" (see claim 60, line 1)" which renders the claim indefinite since it is unclear if the claim directed to a method of rate matching or a device for rate matching. The examiner would appreciate if the applicant would clarify this matter.

h) Claim 69 recited, "so as to exclude the first bit" (Emphasis Added). The term "so as to exclude" is indefinite.

i) Claim 69 recites, "alternatively perform the puncturing process". The examiner asserts that it is impossible to determine the intention of the previously quoted phrase since "alternatively perform" exhausts all possibilities. Clarification is required.

j) Claim 74 recited, "so as to puncture" (Emphasis Added). The term "so as to puncture" is indefinite.

The applicant must revise the claims to remove all 35 U.S.C. 112 errors. The claims are generally narrative and indefinite, failing to conform to current practice. They are replete with grammatical and idiomatic errors. The claims need to be revised to remove all grammatical errors as well as 112 issues some of which the examiner has pointed out.

Claim Rejections - 35 USC § 101, Non Statutory

4. Claims **51-55 and 69-82,** are rejected under 35 U.S.C. 101 because the claimed invention is directed to **non-statutory** subject matter because: the claimed invention is directed to non-statutory subject matter.

The language of the claim 51 "a method for deciding a parameter for an uplink rate matching, comprising: calculating a rate between an input bit sequence and a number of repetition bits; calculating an average repetition distance variable value of a code symbol unit depending upon each of the calculated rate; and calculating a shifting parameter for deciding a repetition position per each column of an interleaver to the input bit sequence for interleaving by using (as in claim 51) raises a question as to whether the claim is directed merely to an abstract

idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C 101.

Claims 52-55, which are directly or indirectly dependents of claim 51 are also rejected under 35 U.S.C. 101, non-statutory.

Claim 69 is rejected under 35 U.S.C. 101 because the claimed invention is directed to subject matter because: the claimed invention (as in claim 69) is directed to algorithm not embedded in computer readable medium. For example, a method for optimizing a parameter of a parallel puncturing algorithm, in a rate matching for each bit sequence in accordance with a channel coded bit sequence divided into a bit sequence (x), a second bit sequence (y), and a third bit sequence (z), comprising: when carrying out a parallel puncturing process for each bit sequence, using a parameter controlling a position of a puncturing code bit, so as to exclude the bit sequence (x) from the puncturing process, and to serially and alternatively perform the puncturing process on the second bit sequence %) and the third bit sequence (z) is only directed to mathematical algorithms rather than limited to practical applications.

Claims 70-73, which are directly or indirectly dependents of claim 69 are also rejected under 35 U.S.C. 101, non-statutory.

Claim 74 is rejected under 35 U.S.C. 101 because the claimed invention is directed to subject matter because: the claimed invention (as in claim 74) is directed to algorithm not embedded in computer readable medium. For example, a method for optimizing a parameter of a parallel puncturing algorithm, in a rate matching algorithm for a turbo coded systematic bit sequence, a turbo coded first parity bit sequence, and a turbo coded second parity bit sequence,

comprising: deciding different parameter (a) values for puncturing the first parity bit sequence and the second parity bit sequence, so as to puncture at least one bit corresponding to the first and second parity bit sequences in a specific symbol of a punctured output is only directed to mathematical algorithms rather than limited to practical applications.

Claims 75-82, which are directly or indirectly dependents of claim 74 are also rejected under 35 U.S.C. 101, non-statutory.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere* CO., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims **40, 42-48, 50-67 and 69-82** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gelblum et al. (U.S. PN: 6,088,387).

As per claims 40 and 69:

Gelblum et al. disclose an apparatus and a method for transmitting turbo-encoded data in a multi-tone channel (see abstract) comprising performing a channel coding and outputting channel-coded sequences (see col. 2, lines 6-11 and col. 4, lines 27-35), constructing a first interleaving pattern (see fig. 1, element 16 and col. 3, last paragraph), constructing virtual (uniform) interleaving patterns by considering a mapping data with a corresponding first interleaving pattern (see col. 4, lines 8-21) and puncturing bits in the first interleaving pattern constructed in the virtual (uniform) interleaving pattern (see col. 4, lines 51-56). Gelblum et al. further disclose a parity bit selection for puncturing bits which are inputted from the RSC encoders to output channel encoded data (see fig. 1, element 21), a channel assignment controller (see fig. 4, element 24) for performing the selection of parity bits (puncturing parity bits) and for mapping bit position according to a specific rules that determines the constellation size for each channel and which information and parity bits are assigned (see col. 4, lines 27-35). Furthermore, Gelblum et al. teach the calculation of gamma probabilities whereby a gamma function data represent a first order probability of both the information and parity bits and both derived based on channel characteristics and mapped into a modulator which the gamma probabilities are applied to uniform interleaver (see col. 4, lines 41-56). Gelblum et al. **do not explicitly** teach calculating bit shifting values in each column of the virtual interleaving pattern. **However,** the method of calculating or computing bit shifting values in a row or column is known in the art because intereleavers are memories configured to store a received data frame as an array organized into rows and columns and connected to a processor and configured to permute (calculate) a received data frame. **Therefore,** it would have been obvious to a person having ordinary skill in the art at the time the invention was made calculate bits using processors and

shifting values in each column of an interleaver. This **modification** would have been obvious because one person having ordinary skill in the art would have been motivated to use the method of computing bit values in each column in order to facilitate the separation of the individual errors within error bursts which results in combating the errors with in the channel processing systems.

As per claims **42-44:** Gelblum et al. teach all subject matter claimed in claim 40 including a method of determining bit position to be punctured (see col. 4, lines 51-56).

As per claims **45-47:** Gelblum et al teach all subject matter claimed in claim 40 including performing a channel coding (see fig. 1, elements 12 and 14) in a frame unit and a mapping rule (see fig. 1, element line 27B).

As per claims **70-73:** Gelblum et al. teach all subject matter claimed in claim 69 including a method of determining bit position to be punctured (see col. 4, lines 51-56).

As per claims **51-55:**

Gelblum et al teach all subject matter claimed in claim 40 including performing a channel coding (see fig. 1, elements 12 and 14) in a frame unit and a mapping rule (see fig. 1, element line 27B). Gelblum et al. **do not explicitly teach** calculating an average repetition. **However,** such methods of calculating an average or mean repetition or bit repetition are known in the art and common knowledge to most of data transmission systems. **Therefore,** it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the methods of repetition when the coded symbol rate is lower than the given channel symbol rate. **This modification** would have been obvious because one person having ordinary skill in the art

would have been motivated to use the methods of sequence repetition in order to minimize the transmission channel bandwidth.

As per claims 56, 60, and 74:

Gelblum et al. disclose an apparatus and a method for transmitting turbo-encoded data in a multi-tone channel (see abstract) comprising performing a channel coding and outputting channel-coded sequences (see col. 2, lines 6-11 and col. 4, lines 27-35), constructing a first interleaving pattern (see fig. 1, element 16 and col. 3, last paragraph), constructing virtual (uniform) interleaving patterns by considering a mapping data with a corresponding first interleaving pattern (see col. 4, lines 8-21) and puncturing bits in the first interleaving pattern constructed in the virtual (uniform) interleaving pattern (see col. 4, lines 51-56). Gelblum et al further disclose a parity bit selection for puncturing bits which are inputted from the RSC encoders to output channel encoded data (see fig. 1, element 21), a channel assignment controller (see fig. 4, element 24) for performing the selection of parity bits (puncturing parity bits) and for mapping bit position according to a specific rules that determines the constellation size for each channel and which information and parity bits are assigned (see col. 4, lines 27-35). Further, Gelblum et al. teach a method of determining bit position to be punctured (see col. 4, lines 51-56). Furthermore, Gelblum et al. teach the calculation of gamma probabilities whereby a gamma function data represent a first order probability of both the information and parity bits and both derived based on channel characteristics and mapped into a modulator which the gamma probabilities are applied to uniform interleaver (see col. 4, lines 41-56). Gelblum et al. **do not explicitly teach** calculating a shifting parameter values by using the puncturing distance and deciding a puncturing position in the virtual interleaving pattern. **However,** the method of

calculating or computing shifting parameter values in an virtual interleaving pattern is known in the art because intereleavers are memories configured to store a received data frame as an array organized into rows and columns and connected to a processor and configured to permute (calculate) a received data frame. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made calculate bits using processors and shifting parameter values in each column of an interleaver. This **modification** would have been obvious because one person having ordinary skill in the art would have been motivated to use the method of computing bit values in each column in order to facilitate the separation of the individual errors within error bursts which results in combating the errors with in the channel processing systems.

As per claims **57-59 and 61-67:**

Gelblum et al. teach all subject matter claimed in claims 56 and 60 including a method of determining bit position to be punctured (see col. 4, lines 51-56).

As per claims **75-82:**

Gelblum et al. teach all subject matter claimed in claims 56 and 60 including a method of determining bit position to be punctured (see col. 4, lines 51-56).

Allowable subject matter

6. Claims **41 and 22-32** are objected to as being dependent upon a rejected base claim but would be allowable if rewritten independent from including all of the limitation of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As per claim 41:

The claimed invention comprises the method wherein n = (3k + 2)mod K for the first interleaving pattern, and n = (3k + 2)mod K for the second virtual interleaving pattern, wherein n represents a column index of the virtual interleaving pattern, k is a column index of the interleaving pattern, and K is a number of columns of the interleaver.

7. Claim **21** would be allowable if rewritten to overcome the 112, 2nd paragraph rejection to the claim, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

As per claim 21:

The prior art, Gelblum et al (U.S. PN: 6,088,387) of record teach an apparatus and a method for transmitting turbo-encoded data in a multi-tone channel (see abstract) comprising performing a channel coding and outputting channel-coded sequences (see col. 2, lines 6-11 and col. 4, lines 27-35), constructing a first interleaving pattern (see fig. 1, element 16 and col. 3, last paragraph), constructing virtual (uniform) interleaving patterns by considering a mapping data with a corresponding first interleaving pattern (see col. 4, lines 8-21) and puncturing bits in the first interleaving pattern constructed in the virtual (uniform) interleaving pattern (see col. 4, lines 51-56). Gelblum et al further disclose a parity bit selection for puncturing bits which are inputted from the RSC encoders to output channel encoded data (see fig. 1, element 21), a channel assignment controller (see fig. 4, element 24) for performing the selection of parity bits (puncturing parity bits) and for mapping bit position according to a specific rules that determines the constellation size for each channel and which information and parity bits are assigned (see col. 4, lines 27-35). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious rate matching method for uplink of a mobile telecommunication

system, comprising: interleaving a plurality of turbo coded bits including a first bit sequence, a second bit sequence, and a third bit sequence at an intetreaver calculating a first shifting parameter value to the second bit sequence for each column of the interleaver carrying out the intetleaving step; calculating a second shifting parameter value to the third bit sequence for each column of the interleaver carrying out the interleaving step; and deciding a rate matching pattern for each of the second bit sequence and the third parity bit sequence by using the shifting parameter values.

As per claims **22-32,** which are directly or indirectly dependent of claim 21 would be allowable if the 112, 2nd paragraph rejection to the claim 1 is overcome.

8. Claims **49 and 68** would be allowable if rewritten to overcome the objection to the claim, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

As per claim 49:

The prior art, Gelblum et al. (U.S. PN: 6,088,387) of record teach an apparatus and a method for transmitting turbo-encoded data in a multi-tone channel (see abstract) comprising performing a channel coding and outputting channel-coded sequences (see col. 2, lines 6-11 and col. 4, lines 27-35), constructing a first interleaving pattern (see fig. 1, element 16 and col. 3, last paragraph), constructing virtual (uniform) interleaving patterns by considering a mapping data with a corresponding first interleaving pattern (see col. 4, lines 8-21) and puncturing bits in the first interleaving pattern constructed in the virtual (uniform) interleaving pattern (see col. 4, lines 51-56). Gelblum et al. further disclose a parity bit selection for puncturing bits which are inputted from the RSC encoders to output channel encoded data (see fig. 1, element 21), a

channel assignment controller (see fig. 4, element 24) for performing the selection of parity bits (puncturing parity bits) and for mapping bit position according to a specific rules that determines the constellation size for each channel and which information and parity bits are assigned (see col. 4, lines 27-35). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious a rate matching device for uplink of a mobile telecommunication system, comprising means for interleaving a plurality of turbo coded bits including a systematic bit sequence, a first parity bit sequence, and a second parity bit sequence; and means for providing a first shifting parameter corresponding to a column having a wireless frame number of (3k +1)modK of the interleaver for the first parity bit sequence, and providing a second shifting parameter corresponding to a column having a wireless frame number of (3k+1)modK of the interleaver for the second parity bit sequence, and means deciding a rate matching pattern of the interleaved output by using the provided shifting parameters, wherein k is an integer in a range of 0 f-k < K, and K is a number of columns of the interleaving means.

As per claim 68:

The prior art, Gelblum et al (U.S. PN: 6,088,387) of record teach an apparatus and a method for transmitting turbo-encoded data in a multi-tone channel (see abstract) comprising performing a channel coding and outputting channel-coded sequences (see col. 2, lines 6-11 and col. 4, lines 27-35), constructing a first interleaving pattern (see fig. 1, element 16 and col. 3, last paragraph), constructing virtual (uniform) interleaving patterns by considering a mapping data with a corresponding first interleaving pattern (see col. 4, lines 8-21) and puncturing bits in the first interleaving pattern constructed in the virtual (uniform) interleaving pattern (see col. 4, lines 51-56). Gelblum et al further disclose a parity bit selection for puncturing bits which are inputted

from the RSC encoders to output channel encoded data (see fig. 1, element 21), a channel assignment controller (see fig. 4, element 24) for performing the selection of parity bits (puncturing parity bits) and for mapping bit position according to a specific rules that determines the constellation size for each channel and which information and parity bits are assigned (see col. 4, lines 27-35). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious calculating a specific parameter R by performing a modular operation of a predetermined number of bits required for rate matching to a number of input bits N; if the parameter R value is not equal to 0 and if a value twice the parameter R value is equal to or less than the number of input bits, calculating a distance q for the rate matching as a minimum integer equal to or greater than a value obtained by dividing the number of input bits N by the parameter R; if a value twice the parameter R value exceeds the number of input bits, calculating a distance q for the rate matching as a minimum integer equal to or greater than a value obtained by dividing the number of input bits N by a subtracted value of the number of input bits N from the parameter R value; calculating a shifting parameter S for deciding a bit position in a rate matching pattern by using the distance q for the rate matching; and carrying out a rate matching algorithm by using the shifting parameter S.

Examiner's statement for reason for allowance

The following is an examiner's statement for allowance:

9. Claims **33-39** have been allowed.

As per claim 33:

The prior art, Gelblum et al (U.S. PN: 6,088,387) of record teach an apparatus and a method for transmitting turbo-encoded data in a multi-tone channel (see abstract) comprising performing a channel coding and outputting channel-coded sequences (see col. 2, lines 6-11 and col. 4, lines 27-35), constructing a first interleaving pattern (see fig. 1, element 16 and col. 3, last paragraph), constructing virtual (uniform) interleaving patterns by considering a mapping data with a corresponding first interleaving pattern (see col. 4, lines 8-21) and puncturing bits in the first interleaving pattern constructed in the virtual (uniform) interleaving pattern (see col. 4, lines 51-56). Gelblum et al further disclose a parity bit selection for puncturing bits which are inputted from the RSC encoders to output channel encoded data (see fig. 1, element 21), a channel assignment controller (see fig. 4, element 24) for performing the selection of parity bits (puncturing parity bits) and for mapping bit position according to a specific rules that determines the constellation size for each channel and which information and parity bits are assigned (see col. 4, lines 27-35). **However,** the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious a rate matching method for uplink of a mobile telecommunication system, comprising: interleaving a plurality of turbo coded bits including a plurality of systematic bits, a plurality of first parity bits, and a plurality of second parity bits at an interleaver; providing a first shifting parameter corresponding to a wireless frame having an index for the fast parity bits of (3k+1)mod K; providing a second shifting parameter corresponding to a wireless frame having an index for the second parity bits of (3k + 2)mod K; and deciding a match rating pattern for each of the first parity bits and the second parity bits of the output of the interleaving output by using the shifting parameters, wherein k is an integer in a

range of 0 S k < K, and K represents a number of columns of the interleaver. Consequently, claim 33 is allowed over the prior art.

Claims **34-39,** which is/are directly or indirectly dependent/s of claim 33 are also allowable over the prior art of record.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US PN: 5,978,365 Yi

US PN: 6,023,783 Divsalar et al.

11. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Esaw Abraham whose telephone number is (571) 272-3812. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are successful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9360 for after final communications.

Esaw Abraham

Art unit: 2133

GUY LAMARRE
PRIMARY EXAMINER